

Claims

1. A peptide comprising at least one T-cell epitope of Japanese cypress pollen allergen Cha o 1 and having an amino acid sequence selected from Peptide #1-2 (SEQ ID NO: 4), Peptide #1-4 (SEQ ID NO: 6), Peptide #1-5 (SEQ ID NO: 7), Peptide #1-6 (SEQ ID NO: 8), Peptide #1-7 (SEQ ID NO: 9), Peptide #1-8 (SEQ ID NO: 10), Peptide #1-10 (SEQ ID NO: 12), Peptide #1-11 (SEQ ID NO: 13), Peptide #1-12 (SEQ ID NO: 14), Peptide #1-14 (SEQ ID NO: 16), Peptide #1-15 (SEQ ID NO: 17), Peptide #1-16 (SEQ ID NO: 18), Peptide #1-19 (SEQ ID NO: 21), Peptide #1-20 (SEQ ID NO: 22), Peptide #1-21 (SEQ ID NO: 23), Peptide #1-22 (SEQ ID NO: 24), Peptide #1-23 (SEQ ID NO: 25), Peptide #1-24 (SEQ ID NO: 26), Peptide #1-25 (SEQ ID NO: 27), Peptide #1-26 (SEQ ID NO: 28), Peptide #1-27 (SEQ ID NO: 29), Peptide #1-30 (SEQ ID NO: 32), Peptide #1-31 (SEQ ID NO: 33), Peptide #1-32 (SEQ ID NO: 34), Peptide #1-33 (SEQ ID NO: 35), and Peptide #1-34 (SEQ ID NO: 36) shown in Fig. 4, or a part of said amino acid sequence.

2. A peptide comprising at least one T-cell epitope of Japanese cypress pollen allergen Cha o 2 and having an amino acid sequence selected from Peptide #2-5 (SEQ ID NO: 42), Peptide #2-7 (SEQ ID NO: 44), Peptide #2-8 (SEQ ID NO: 45), Peptide #2-9 (SEQ ID NO: 46), Peptide #2-10 (SEQ ID NO: 47), Peptide #2-11 (SEQ ID NO: 48), Peptide #2-12 (SEQ ID NO: 49), Peptide #2-13 (SEQ ID NO: 50), Peptide #2-14 (SEQ ID NO: 51), Peptide #2-15 (SEQ ID NO: 52), Peptide #2-16 (SEQ ID NO: 53), Peptide #2-17 (SEQ ID NO: 54), Peptide #2-18 (SEQ ID NO: 55),

Peptide #2-19 (SEQ ID NO: 56), Peptide #2-20 (SEQ ID NO: 57),
Peptide #2-21 (SEQ ID NO: 58), Peptide #2-22 (SEQ ID NO: 59),
Peptide #2-23 (SEQ ID NO: 60), Peptide #2-24 (SEQ ID NO: 61),
Peptide #2-25 (SEQ ID NO: 62), Peptide #2-26 (SEQ ID NO: 63),
Peptide #2-27 (SEQ ID NO: 64), Peptide #2-30 (SEQ ID NO: 67),
Peptide #2-31 (SEQ ID NO: 68), Peptide #2-32 (SEQ ID NO: 69),
Peptide #2-33 (SEQ ID NO: 70) and Peptide #2-34 (SEQ ID NO:
71), Peptide #2-35 (SEQ ID NO: 72), Peptide #2-36 (SEQ ID NO:
73), Peptide #2-37 (SEQ ID NO: 74), Peptide #2-38 (SEQ ID NO:
75), Peptide #2-40 (SEQ ID NO: 77), Peptide #2-41 (SEQ ID NO:
78), Peptide #2-42 (SEQ ID NO: 79), and Peptide #2-43 (SEQ ID
NO: 80) shown in Fig. 8, or a part of said amino acid sequence.

3. The peptide of claim 1 ~~or 2~~, wherein said peptide
comprises at least two T-cell epitopes.

4. A peptide having an effect to stimulate and/or suppress
activities of T-cells derived from patients with pollinosis
caused by tree pollens in springtime and having the amino acid
sequence as described in claim 1 ~~or 2~~ which is modified by
substitution, deletion, or insertion.

5. A composition for peptide-based immunotherapy of
pollinosis caused by tree pollens in springtime, comprising
the peptide of ^{claim 2} ~~any one of claims 1 to 4~~ as an effective
ingredient.

6. Use of the peptide of any one of claims 1 to 4 for preparing
a composition for peptide-based immunotherapy of pollinosis
caused by tree pollens in springtime.

7. A method for treating or preventing pollinosis caused

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by tree pollens in springtime, comprising administering the peptide of ^{claim 1} ~~any one of claims 1 to 4~~.

8. A reagent for diagnosing pollinosis caused by tree pollens in springtime, comprising the peptide of ^{claim 1} ~~any one of claims 1 to 4~~ as an effective ingredient.

9. Use of the peptide of any one of claims 1 to 4 for preparing a reagent for diagnosing pollinosis caused by tree pollens in springtime.

10. A method for ~~diagnosing~~ pollinosis caused by tree pollens in springtime, comprising administering the peptide of ^{claim 1} ~~any one of claims 1 to 4~~.

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